```
=> d his nofile

     (FILE 'HOME' ENTERED AT 07:48:56 ON 04 MAR 2010)

     FILE 'HCAPLUS' ENTERED AT 07:49:09 ON 04 MAR 2010
L1             1 SEA SPE=ON  ABB=ON  PLU=ON  US20070248864/PN
                 D L1 ALL

     FILE 'WPIX' ENTERED AT 07:50:05 ON 04 MAR 2010
L2             1 SEA SPE=ON  ABB=ON  PLU=ON  US20070248864/PN
                 D L2 FULL

     FILE 'ZCAPLUS' ENTERED AT 07:50:28 ON 04 MAR 2010
L3               QUE SPE=ON  ABB=ON  PLU=ON  FUEL# (2W) CELL#
L4               QUE SPE=ON  ABB=ON  PLU=ON  SOLID# (2W) OXIDE#
L5               QUE SPE=ON  ABB=ON  PLU=ON  L4 (3A) L3
L6               QUE SPE=ON  ABB=ON  PLU=ON  SOFC#
L7               QUE SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L8               QUE SPE=ON  ABB=ON  PLU=ON  ANODE#
L9               QUE SPE=ON  ABB=ON  PLU=ON  CATHODE#
L10              QUE SPE=ON  ABB=ON  PLU=ON  L8 (3A) L9
L11              QUE SPE=ON  ABB=ON  PLU=ON  SURFACE# OR SUBSTRATE#
L12              QUE SPE=ON  ABB=ON  PLU=ON  L10 (5A) L11

     FILE 'JAPIO, PASCAL, ENERGY, INSPEC, WPIX, HCAPLUS' ENTERED AT
     07:59:09 ON 04 MAR 2010
L13         1295 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L14         4481 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L15         6374 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L16         6873 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L17         4220 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
L18        14674 SEA SPE=ON  ABB=ON  PLU=ON  L5 OR L6
     TOTAL FOR ALL FILES
L19        37917 SEA SPE=ON  ABB=ON  PLU=ON  L7
L20            4 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND L12
L21           11 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND L12
L22           16 SEA SPE=ON  ABB=ON  PLU=ON  L15 AND L12
L23           40 SEA SPE=ON  ABB=ON  PLU=ON  L16 AND L12
L24           73 SEA SPE=ON  ABB=ON  PLU=ON  L17 AND L12
L25           67 SEA SPE=ON  ABB=ON  PLU=ON  L18 AND L12
     TOTAL FOR ALL FILES
L26          211 SEA SPE=ON  ABB=ON  PLU=ON  L19 AND L12
                 D L25 1-10 KWIC

     FILE 'ZCAPLUS' ENTERED AT 08:01:18 ON 04 MAR 2010
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L27             QUE SPE=ON  ABB=ON  PLU=ON  SAME# (3W) L11
L28             QUE SPE=ON  ABB=ON  PLU=ON  ELECTROLYTE#
L29             QUE SPE=ON  ABB=ON  PLU=ON  L28 (5A) L27

     FILE 'JAPIO, PASCAL, ENERGY, INSPEC, WPIX, HCAPLUS' ENTERED AT
     08:03:34 ON 04 MAR 2010
L30           0 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L20
L31           1 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L21
L32           0 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L22
L33           1 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L23
L34           0 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L24
L35           3 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L25
     TOTAL FOR ALL FILES
L36           5 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L26
                D L36 1-5 KWIC

     FILE 'ZCAPLUS' ENTERED AT 08:05:11 ON 04 MAR 2010
L37             QUE SPE=ON  ABB=ON  PLU=ON  SIDE#
L38             QUE SPE=ON  ABB=ON  PLU=ON  SAME (3W) (L37 OR L11)
L39             QUE SPE=ON  ABB=ON  PLU=ON  L38 AND L19

     FILE 'JAPIO, PASCAL, ENERGY, INSPEC, WPIX, HCAPLUS' ENTERED AT
     08:06:58 ON 04 MAR 2010
L40           4 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L13
L41           8 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L14
L42           3 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L15
L43          11 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L16
L44           7 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L17
L45          26 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND L18
     TOTAL FOR ALL FILES
L46          59 SEA SPE=ON  ABB=ON  PLU=ON  L39
                D L46 1-5 KWIC

     FILE 'ZCAPLUS' ENTERED AT 08:08:03 ON 04 MAR 2010
L47             QUE SPE=ON  ABB=ON  PLU=ON  ELECTRODE#
L48             QUE SPE=ON  ABB=ON  PLU=ON  L47 OR L28
L49             QUE SPE=ON  ABB=ON  PLU=ON  L38 (5A) L48
L50             QUE SPE=ON  ABB=ON  PLU=ON  L49 AND L19

     FILE 'JAPIO, PASCAL, ENERGY, INSPEC, WPIX, HCAPLUS' ENTERED AT
     08:09:54 ON 04 MAR 2010
L51           3 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L13
L52           5 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L14
L53           0 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L15
L54           6 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L16
L55           1 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L17
L56          15 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L18
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     TOTAL FOR ALL FILES
L57          30 SEA SPE=ON  ABB=ON  PLU=ON  L50
L58           3 SEA SPE=ON  ABB=ON  PLU=ON  L30 OR L51
L59           5 SEA SPE=ON  ABB=ON  PLU=ON  L31 OR L52
L60           0 SEA SPE=ON  ABB=ON  PLU=ON  L32 OR L53
L61           6 SEA SPE=ON  ABB=ON  PLU=ON  L33 OR L54
L62           1 SEA SPE=ON  ABB=ON  PLU=ON  L34 OR L55
L63          15 SEA SPE=ON  ABB=ON  PLU=ON  L35 OR L56
     TOTAL FOR ALL FILES
L64          30 SEA SPE=ON  ABB=ON  PLU=ON  L36 OR L57
                D L63 1-5 KWIC

     FILE 'ZCAPLUS' ENTERED AT 08:11:44 ON 04 MAR 2010
L65             QUE SPE=ON  ABB=ON  PLU=ON  DIFFERENT# OR DIFFERING#
L66             QUE SPE=ON  ABB=ON  PLU=ON  L65 (3W) (37 OR L11)
L67             QUE SPE=ON  ABB=ON  PLU=ON  L66 (5A) L28
L68             QUE SPE=ON  ABB=ON  PLU=ON  L67 AND L19

     FILE 'JAPIO, PASCAL, ENERGY, INSPEC, WPIX, HCAPLUS' ENTERED AT
     08:13:30 ON 04 MAR 2010
L69             0 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L13
L70             2 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L14
L71             2 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L15
L72             3 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L16
L73             0 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L17
L74             5 SEA SPE=ON  ABB=ON  PLU=ON  L67 AND L18
     TOTAL FOR ALL FILES
L75            12 SEA SPE=ON  ABB=ON  PLU=ON  L68
L76             0 SEA SPE=ON  ABB=ON  PLU=ON  L69 NOT L58
L77             2 SEA SPE=ON  ABB=ON  PLU=ON  L70 NOT L59
L78             2 SEA SPE=ON  ABB=ON  PLU=ON  L71 NOT L60
L79             3 SEA SPE=ON  ABB=ON  PLU=ON  L72 NOT L61
L80             0 SEA SPE=ON  ABB=ON  PLU=ON  L73 NOT L62
L81             5 SEA SPE=ON  ABB=ON  PLU=ON  L74 NOT L63
     TOTAL FOR ALL FILES
L82            12 SEA SPE=ON  ABB=ON  PLU=ON  L75 NOT L64
L83            23 DUP REMOV L64 (7 DUPLICATES REMOVED)
                      ANSWERS '1-3' FROM FILE JAPIO
                      ANSWERS '4-8' FROM FILE PASCAL
                      ANSWERS '9-10' FROM FILE INSPEC
                      ANSWER '11' FROM FILE WPIX
                      ANSWERS '12-23' FROM FILE HCAPLUS
L84             7 DUP REMOV L82 (5 DUPLICATES REMOVED)
                      ANSWERS '1-2' FROM FILE PASCAL
                      ANSWER '3' FROM FILE INSPEC
                      ANSWERS '4-7' FROM FILE HCAPLUS
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FILE 'LREGISTRY' ENTERED AT 08:14:41 ON 04 MAR 2010

=> d l83 1-10 bib abs ind
YOU HAVE REQUESTED DATA FROM FILE 'JAPIO, PASCAL, INSPEC, WPIX, HCAPLUS' -
CONTINUE? (Y)/N:y

L83 ANSWER 1 OF 23 JAPIO (C) 2010 JPO on STN
AN 2005-222774 JAPIO Full-text
TI **SOLID OXIDE FUEL CELL**
IN YOSHIKATA KUNIAKI; MIKAMI TAKEKAZU
PA DAINIPPON PRINTING CO LTD
PI JP 2005222774 A 20050818 Heisei
AI JP 2004-28135 (JP2004028135 Heisei) 20040204
PRAI JP 2004-28135 20040204
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2005
AN 2005-222774 JAPIO Full-text
AB PROBLEM TO BE SOLVED: To further improve power generation efficiency, in a **solid oxide fuel cell** of a type which is used for generating power in a mixture gas and in which a fuel electrode and an air **electrode** are arranged on the **same surface** of an **electrolyte**. SOLUTION: This fuel cell is provided with: the electrolyte 1; a plurality of electrode bodies E each comprising the fuel electrode 3 and the air electrode 5 and arranged on one-side surface of the electrolyte 1; and inter-connectors 7 for serially connecting the plurality of electrode bodies E. The plurality of electrode bodies E are arranged in a form where the same poles are arranged oppositely to each other between the adjacent electrode bodies, provided with barrier rib members 11 for forming spaces S for housing the electrodes between the one-side surface of the electrolyte 1 and themselves, and for isolating the fuel electrode 3 from the air electrode 5 in each electrode body E. A fuel gas is supplied to each space S for housing the fuel electrode 3, and an oxidizer gas such as air is supplied to each space for housing the air electrode 5. COPYRIGHT: (C)2005,JPO&NCIPI
IC ICM H01M008-02
ICS H01M008-12

L83 ANSWER 2 OF 23 JAPIO (C) 2010 JPO on STN
AN 2005-056839 JAPIO Full-text
TI **SOLID OXIDE FUEL CELL**
IN YOSHIKATA KUNIAKI; MIKAMI TAKEKAZU
PA DAINIPPON PRINTING CO LTD
PI JP 2005056839 A 20050303 Heisei

AI JP 2004-216151 (JP2004216151 Heisei) 20040723
PRAI JP 2003-278485 20030723
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2005
AN 2005-056839 JAPIO Full-text
AB PROBLEM TO BE SOLVED: To provide a **solid oxide fuel cell** capable of generating high power, while improving vulnerability and reducing cost. SOLUTION: The oxide fuel cell comprises two unit cells C each having an electrolyte 3, fuel electrode 5, and air electrode 7. The oxide fuel cell also comprises a substrate for supporting the unit cells C, and an inter-connector 9 for connecting between the two unit cells. The electrolyte 3 in each unit cell C is formed through printing on the substrate 1 with a predetermined interval S. The fuel electrode 5 and the air **electrode** 7 are arranged on the **same surface** of the **electrolyte** 3 with a predetermined interval L.
COPYRIGHT: (C)2005,JPO&NCIPI
IC ICM H01M008-24
ICS H01M008-02; H01M008-12

L83 ANSWER 3 OF 23 JAPIO (C) 2010 JPO on STN
AN 2004-303508 JAPIO Full-text
TI UNIT CELL STRUCTURE FOR **FUEL CELL**, AND **SOLID OXIDE** TYPE **FUEL CELL** USING IT
IN HARA NAOKI; TAKEUCHI KAZUFUMI; SHIBATA ITARU
PA NISSAN MOTOR CO LTD
PI JP 2004303508 A 20041028 Heisei
AI JP 2003-93400 (JP2003093400 Heisei) 20030331
PRAI JP 2003-93400 20030331
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2004
AN 2004-303508 JAPIO Full-text
AB PROBLEM TO BE SOLVED: To provide a unit cell structure for a fuel cell having a high-reliability junction part, and capable of reducing the size and weight of the **fuel cell**; and a **solid oxide** type **fuel cell** using it.
SOLUTION: In this unit cell structure for a fuel cell, two single cells each composed by installing a cell element on a metal support body having fine pores are jointed to a metal thin plate having through-holes so as to face their **electrode** layers on the **same side** to each other. This **solid oxide** type **fuel cell** is composed by connecting and integrating a plurality of the unit cell structures in a direction nearly equal to and/or in a direction nearly vertical to the stacking direction of the unit cells and the metal thin plates, by installing insulation parts on the metal support parts and the metal thin plates, and by installing current collection parts on the

side of a fuel electrode and on the side of an air electrode of every unit cell structure. COPYRIGHT: (C)2005,JPO&NCIPI
IC ICM H01M008-02
ICS H01M008-12; H01M008-24

L83 ANSWER 4 OF 23 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 1
AN 2008-0422468 PASCAL Full-text
CP Copyright .COPYRGT. 2008 INIST-CNRS. All rights reserved.
TIEN Selective Control of Voltage Polarity in a Single-Chamber **Solid-Oxide Fuel Cell** Using the Same Catalytic Electrodes with Different Sizes
AU NAGATA Akiyoshi; KIMURA Takeshi
CS Department of Electrical and Electronic Systems Engineering, Faculty of Engineering, Osaka Institute of Technology, 5-16-1, Omiya, Asahi-ku, Osaka 535-8585, Japan; Chiba Refinery, Cosmo Oil Co., Ltd., 2, Goi-Kaigan, Ichihara, Chiba 290-8558, Japan
SO IEEJ transactions on electrical and electronic engineering, (2008), 3(5), 569-573, 6 refs.
ISSN: 1931-4973
DT Journal
BL Analytic
CY United States
LA English
AV INIST-27871, 354000196515210140
CP Copyright .COPYRGT. 2008 INIST-CNRS. All rights reserved.
AB The selective control of the voltage polarity in a single-chamber **solid-oxide fuel cell** (SC- **SOFC**) constituting the **anode** and **cathode** arranged at the **same electrolyte surface** of yttria-stabilized zirconia (YSZ) or samaria-doped ceria (SDC) and which can operate in a flowing mixture of hydrogen and oxygen is discussed on the basis of the dissociation and adsorption reactions due to the catalytic materials and electrode configurations. The open circuit voltage (OCV) of SC-**SOFC** showed the highest value when the H.sub.2 : O.sub.2 ratio was around 2 : 1, which might be equal to the mol ratio of oxygen and hydrogen based on the reaction of water formation by the electrochemical reaction in the cell. The voltage polarity of the cell using the Pt and LSM (La.sub.0.sub...sub.7Sr.sub.0.sub...sub.3MnO.sub.3) catalysts was the same as in the conventional **SOFC** such that in the Pt catalysis the anode became negative whereas in the LSM catalysis the cathode was independent of the electrode configurations. In SC- **SOFC** using the same Pt catalyst, the larger Pt electrode functioned as the cathode desorbing the oxide ion conducting in YSZ or SDC. As a result, it was confirmed that the voltage polarity of SC-**SOFC** could be selectively controlled by making use of the same catalytic electrodes with different sizes, and that the I-V characteristic of

the cell improved by using SDC with Pt electrodes with a surface area ratio of 2: 1.

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CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
001D05I03E; Applied sciences; Electrical engineering; Electrical power engineering
230; Energy

CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
001D05I03E; Sciences appliquees; Electrotechnique; Electroenergetique
230; Energie

CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
001D05I03E; Ciencias aplicadas; Electrotecnica; Electroenergetica
230; Energia

CT Actuation voltage; **Solid oxide fuel cell**; Anode; Cathode; Doping; Adsorption; Electrode configuration; Open circuit voltage; Electrochemical reaction; Catalyst; Voltage current curve; Surface area; Electrochemical sensors; Catalytic reaction; Gas mixture; Plasma; Doped materials

CTFR Tension de commande; Pile combustible oxyde solide; Anode; Cathode; Dopage; Adsorption; Configuration electrode; Tension circuit ouvert; Reaction electrochimique; Catalyseur; Caracteristique courant tension; Aire superficielle; Capteur electrochimique; Reaction catalytique; Melange gaz; Plasma; Materiau dope

CTES Voltaje de control; Pila combustible oxido solido; Anodo; Catodo; Doping; Adsorcion; Configuracion electrodo; Reaccion electroquimica; Catalizador; Caracteristica corriente tension; Area superficial; Reaccion catalitica; Mezcla gas; Plasma

L83 ANSWER 5 OF 23 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 2

AN 2008-0100597 PASCAL Full-text

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TIEN Co-planar type single chamber **solid oxide fuel cell** with micro-patterned electrodes
ICE-2005 International conference on electroceramics

AU AHN Sung-Jin; KIM Yong-Bum; MOON Jooho; LEE Jong-Ho; KIM Joosun CHOI Gyeong Man (ed.); YOON Seok-Jin (ed.); LEE Jong-Heun (ed.)

CS Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea, Republic of; Nano-Materials Research Center, KIST, Seoul 136-791, Korea, Republic of

SO Journal of electroceramics, (2006), 17(2-4), 689-693, 18 refs.
Conference: 2 International conference on electroceramics, Seoul (Korea, Republic of), 12 Jun 2005
ISSN: 1385-3449 CODEN: JOELFJ

DT Journal; Conference
BL Analytic
CY Netherlands
LA English
AV INIST-26772, 354000147054471030
CP Copyright .COPYRGT. 2008 INIST-CNRS. All rights reserved.
AB A co-planar type single chamber solid oxide fuel cell (SC-SOFC) with linearly patterned electrode structures on the same surface as the electrolyte has been fabricated by robo-dispensing method. Paste materials of NiO-SDC-Pd cermet and (La.sub.0.sub.,.sub.7Sr.sub.0.sub.,.sub.3).sub.0.sub.,.sub.9.sub.5M nO.sub.3 (LSM) were selectively deposited onto a substrate of yttria stablized zirconia (YSZ) by extrusion through a syringe nozzle. The dispensed pastes were solidified upon solvent evaporation, and the anode and the cathode were sintered at 1350°C for 2 h and 1200°C for 1h, respectively. We have fabricated SC-SOFCs that have a single electrode pair with varying anode-to-cathode distances and interdigitated patterned electrodes with 2,4, and 8 multiple pairs. The electrode microstructures of the resulting cells were examined by SEM. The electrochemical performance of the SC-SOFCs was also analyzed using impedance spectroscopy and a DC source meter.
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CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels 230; Energy
CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles 230; Energie
CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles 230; Energia
CT Solid oxide fuel cell; Electrode material; Voltage current curve; Manufacturing process; Electrochemical impedance spectroscopy; Performance
CTFR Pile combustible oxyde solide; Materiau electrode; Caracteristique courant tension; Procede fabrication; Spectrometrie impedance electrochimique; Performance; Ecriture directe
CTES Pila combustible oxido solido; Material electrodo; Caracteristica corriente tension; Procedimiento fabricacion; Rendimiento

L83 ANSWER 6 OF 23 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 3
AN 2006-0200796 PASCAL Full-text
CP Copyright .COPYRGT. 2006 INIST-CNRS. All rights reserved.
TIEN Development of a planar SOFC device using screen-printing technology
ELECTROCERAMICS IX'04, Cherbourg, France, 31 May-6 June 2004
AU ROTUREAU D.; VIRICELLE J.-P.; PIJOLAT C.; CAILLOL N.; PIJOLAT M.

HOUSSONNE Jean-Marie (ed.); HOUIVET David (ed.)
CS Ecole Nationale Superieure des Mines, LPMG-UMR CNRS 5148, Departement Microsytemes Instrumentation et Capteurs Chimiques, Centre SPIN, 158 Cours Fauriel, Saint-Etienne 42023, France; Ecole Nationale Superieure des Mines, LPMG-UMR CNRS 5148, Departement PROCedes et Evolution des Systemes avec Solides, Centre SPIN, 158 Cours Fauriel, 42023 Saint-Etienne, France
Laboratoire Universitaire des Sciences Appliquees de Cherbourg (LUSAC), Site Universitaire, BP 78, 50130 Cherbourg Octeville, France
European Ceramic Society ECERS, Mons, Belgium (org-cong.); American Ceramics Society ACERS, Westerville, OH, United States (org-cong.); POLECER, EUR (org-cong.); Ceramic Society of Japan CJI, Japan (org-cong.); Korean Ceramic Society KCS, Korea, Republic of (org-cong.)
SO Journal of the European Ceramic Society, (2005), 25(12), 2633-2636, 10 refs.
Conference: 9 ELECTROCERAMICS. Congress, Cherbourg (France), 31 May 2004
ISSN: 0955-2219
DT Journal; Conference
BL Analytic
CY United Kingdom
LA English
AV INIST-21153, 354000138275311350

AB The aim of this study is to investigate the potentialities of screen-printing technology to manufacture planar SOFC device. Widely studied materials were chosen for this work, particularly YSZ as electrolyte, LSM as cathode and Ni-YSZ cermet for the anode. This technique was firstly used to elaborate the porous electrodes and the collectors constituted by a gold grid. These layers were deposited onto sintered YSZ pellets and two types of fuel cells were produced: conventional two-chambers devices where anode and cathode atmospheres are separate and single-chamber fuel cells (SCFC) where the electrodes are deposited on the same electrolyte side and are in contact with a common surrounding atmosphere. Two test benches were developed to study the cells' performances in separate hydrogen/oxygen atmospheres for conventional device or in a unique methane/oxygen mixture for single-chamber device. At this point of the study, performances are not optimized and weak power density is available, around 1.2 mW/cm.sup.2 for SCFC at 800 °C with a ratio of methane to oxygen equal to 1.5. Performances of two-chambers devices are also weak due to the electrolyte thickness around 1 mm and the low experimental temperature, 500°C. However, the results confirm the feasibility of SCFC and developed test benches constitute a tool for further investigations of modified devices, especially with YSZ

electrolyte thick film supported on interconnect materials as no tightness is required for SCFC, or with multi-layered electrodes.
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CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy
CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie
CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia
CT **Solid oxide fuel cell**;
Serigraphy; Stabilized zirconia; Lanthanum Strontium Manganese Oxides; Thick film; Methane; Hydrogen
CTFR Pile combustible oxyde solide; Serigraphie; Zircone stabilisee; Lanthane Strontium Manganese Oxyde; Couche epaisse; Methane; Hydrogene
CTES Pila combustible oxido solido; Serigrafia; Zircona estabilizada; Lantano Estroncio Manganeso Oxido; Capa espesa; Metano; Hidrogeno

L83 ANSWER 7 OF 23 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 4
AN 2002-0183784 PASCAL Full-text
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TIEN A **solid oxide fuel cell**
with a novel geometry that eliminates the need for preparing a thin electrolyte film
AU HIBINO Takashi; HASHIMOTO Atsuko; SUZUKI Masanori; YANO Masaya; YOSHIDA Shin-Ichiro; SANO Mitsuru
CS National Institute of Advanced Industrial Science and Technology, Nagoya 462-8510, Japan; Graduate School of Human Information, Nagoya University, Nagoya 466-0804, Japan
SO Journal of the Electrochemical Society, (2002), 149(2), A195-A200, 18 refs.
ISSN: 0013-4651 CODEN: JESOAN
DT Journal
BL Analytic
CY United States
LA English
AV INIST-4925, 354000100187380180
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
AB We propose a **solid oxide fuel cell** design based on a configuration of two **electrodes** on the **same surface** of the **electrolyte** in a flowing mixture of different hydrocarbons and air between 500 and 600°C. The ohmic resistance can be reduced without using a thin electrolyte film due to a significantly enhanced performance by the approach of the two electrodes to each other on the smooth

electrolyte surface. The fuel cell performance, especially at reduced temperatures, is further improved by using a more reactive hydrocarbon fuel and a more catalytically active anode. The resulting power density reaches 122 mW cm.sup.-.sup.2 using 2 mm thicker electrolyte at 500°C.
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CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy
CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie
CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia
CT High-temperature fuel cells; **Solid oxide fuel cell**; Hydrocarbon fuel cells; Solid electrolyte; Ternary compound; Cerium oxide; Samarium oxides; Performance evaluation; Discharge charge cycle; Electromotive force; Catalyst activity
CTFR Pile combustible haute temperature; Pile combustible oxyde solide; Pile combustible hydrocarbure; Electrolyte solide; Compose ternaire; Cerium oxyde; Samarium oxyde; Evaluation performance; Cycle charge decharge; Force electromotrice; Activite catalytique
CTES Pila combustible oxido solido; Electrolito solido; Compuesto ternario; Cerio oxido; Evaluacion prestacion; Ciclo carga descarga; Fuerza electromotriz; Actividad catalitica
BT Lanthanide Compounds
BTFR Lanthanide Compose
BTES Lantanido Compuesto

L83 ANSWER 8 OF 23 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 2001-0421400 PASCAL Full-text
CP Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
TIEN Resistance measurement in **solid oxide fuel cells**
AU JIANG S. P.
CS School of Mechanical and Production Engineering, Nanyang Technological University, 639798, Singapore
SO Journal of the Electrochemical Society, (2001), 148(8), A887-A897, 29 refs.
ISSN: 0013-4651 CODEN: JESOAN
DT Journal
BL Analytic
CY United States
LA English
AV INIST-4925, 354000097164410130

CP Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
AB A novel cell configuration has been proposed to measure resistance distribution in **solid oxide fuel cells (SOFCs)**. In this configuration, special voltage probes which were not spot-welded to the current collector were used in addition to the conventional voltage probes which were spot-welded to the current collector. The electrochemical responses measured by the conventional and the special voltage probes across the cell behaved very differently compared to that measured between voltage probes on the **same electrode sides**. The results show that the resistance associated with the electrode/current collector contact on the anode and the cathode sides could be separated quantitatively from the resistance associated with electrode/electrolyte interface contact and electrolyte materials. The reliability of the contact resistance measured by the special voltage probes is discussed.
CP Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy
CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie
CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia
CT **Solid oxide fuel cell**;
Electrical characteristic; Time voltage characteristic; Voltage current curve; Electrical impedance; Temperature effect; Scanning electron microscopy; Surface structure; Morphology; Solid electrolyte; Stabilized zirconia; Yttrium Oxides; Nickel; Cermet; Electrodes
CTFR Pile combustible oxyde solide; Caracteristique electrique; Caracteristique temps tension; Caracteristique courant tension; Impedance electrique; Effet temperature; Microscopie electronique balayage; Structure surface; Morphologie; Electrolyte solide; Zircone stabilisee; Yttrium Oxyde; Nickel; Cermet; Electrode; Configuration pile
CTES Pila combustible oxido solido; Caracteristica electrica; Caracteristica tiempo tension; Caracteristica corriente tension; Impedancia electrica; Efecto temperatura; Microscopia electronica barrido; Estructura superficie; Morfologia; Electrolito solido; Zircona estabilizada; Ytrio Oxido; Niquel; Cermetal; Electrodo

L83 ANSWER 9 OF 23 INSPEC (C) 2010 IET on STN
AN 2007:9336605 INSPEC Full-text
TI Coplanar electrodes design for a single-chamber **SOFC**
AU Jacques-Bedard, X.; Napporn, T.W. (Dept. de Genie Phys., Ecole Polytechnique de Montreal, Que., Canada); Roberge, R.; Meunier, M.

SO Journal of the Electrochemical Society (March 2007), vol.154, no.3, p. B305-9, 27 refs.
CODEN: JESOAN, ISSN: 0013-4651
SICI: 0013-4651(200703)154:3L.b305:CEDS;1-X
Price: 0013-4651/2007/154(3)/B305/5/$20.00
Doc.No.: S0013-4651(07)03203-x
Published by: Electrochem. Soc, USA
DT Journal
TC Practical; Experimental
CY United States
LA English
AN 2007:9336605 INSPEC Full-text
AB **Solid-oxide fuel cells** (**SOFC**) made of conventional materials with coplanar interdigitated **electrodes** located on the **same side** of the **electrolyte** have been fabricated and tested in a uniform mixture of methane and air in order to evaluate the influence of various operating parameters on cell performances. Anode thickness of several hundred micrometers is required to reach good cell stability. Also, the relative positioning of the electrodes in regard to the gas flow should be optimized as the gas composition is modified after passage over the anode. This aspect is particularly important with stacked cells, due to the modification of the gas composition in the upstream portion of the stack. Enhanced performances of the single-side cell were obtained by decreasing the width of the electrodes and their spacing, which both have the effect of reducing the ohmic loss. Following this approach, performances of 40 mW cm-2 were recorded at 800°C using electrodes of 0.5+8 mm separated by a gap of 0.2 mm
AN 2007:9336605 INSPEC Full-text
CC A8630G Fuel cells; B8410G Fuel cells
CT electrochemical electrodes; **solid oxide fuel cells**
ST coplanar interdigitated electrodes design; single-chamber **SOFC**; operating parameters; **solid-oxide fuel cells**; electrolyte; methane; anode thickness; cell stability; gas composition; ohmic loss; 800 degC
PHP temperature 1.07E+03 K
ET C

L83 ANSWER 10 OF 23 INSPEC (C) 2010 IET on STN
AN 2001:7039983 INSPEC DN A2001-20-8630G-006; B2001-10-8410G-027 Full-text
TI Resistance measurement in **solid oxide fuel cells**
AU Jiang, S.P. (Sch. of Mech. & Production Eng., Nanyang Technol. Univ., Singapore)
SO Journal of the Electrochemical Society (Aug. 2001), vol.148, no.8,

p. A887-97, 29 refs.
CODEN: JESOAN, ISSN: 0013-4651
SICI: 0013-4651(200108)148:8L.a887:RMSO;1-#
Price: 0013-4651/2001/148(8)/887/11/$7.00
Doc.No.: S0013-4651(01)05308-3
Published by: Electrochem. Soc, USA
DT Journal
TC Experimental
CY United States
LA English
AN 2001:7039983 INSPEC DN A2001-20-8630G-006; B2001-10-8410G-027
Full-text
AB A novel cell configuration has been proposed to measure resistance distribution in **solid oxide fuel cells (SOFCs)**. In this configuration, special voltage probes which were not spot-welded to the current collector were used in addition to the conventional voltage probes which were spot-welded to the current collector. The electrochemical responses measured by the conventional and the special voltage probes across the cell behaved very differently compared to that measured between voltage probes on the **same electrode sides**. The results show that the resistance associated with the electrode/current collector contact on the anode and the cathode sides could be separated quantitatively from the resistance associated with electrode/electrolyte interface contact and electrolyte materials. The reliability of the contact resistance measured by the special voltage probes is discussed
AN 2001:7039983 INSPEC DN A2001-20-8630G-006; B2001-10-8410G-027
Full-text
CC A8630G Fuel cells; A7340C Contact resistance, contact potential, and work functions; B8410G Fuel cells
CT contact resistance; **solid oxide fuel cells**
ST resistance measurement; **solid oxide fuel cells**; **cell** configuration; current collector; electrochemical responses; electrode/electrolyte interface contact; electrolyte materials; contact resistance; special voltage probes
ET Cs*F*O*S; SOFCs; S cp; cp; O cp; F cp; Cs cp

=> d l83 11 full
YOU HAVE REQUESTED DATA FROM FILE 'JAPIO, PASCAL, INSPEC, WPIX, HCAPLUS' -
CONTINUE? (Y)/N:y

L83 ANSWER 11 OF 23 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2005-671798 [69] WPIX Full-text
DNC C2005-203967 [69]
DNN N2005-550771 [69]
TI Solid acid compound type fuel cell e.g. cylindrical fuel cell has fuel cell housing including strip-shaped fuel and air electrodes located parallelly at preset interval, so that electrode width of electrodes lies in specific range
DC L03; X16
IN SAKAMOTO H; YOSHIKATA K
PA (NIPQ-C) DAINIPPON PRINTING CO LTD
CYC 1
PI JP 2005276536 A 20051006 (200569)* JA 9[3]
ADT JP 2005276536 A JP 2004-85791 20040323
PRAI JP 2004-85791 20040323
IPCR H01M0008-02 [I,A]; H01M0008-02 [I,C]; H01M0008-12 [I,A]; H01M0008-12 [I,C]
FCL H01M0008-02 E; H01M0008-12
FTRM 5H026; 5H026/AA06; 5H026/EE02; 5H026/EE13; 5H026/HH03
AB JP 2005276536 A UPAB: 20051223
NOVELTY - Fuel cell housing (E) includes strip-shaped fuel and air electrodes (3,5) located parallelly at a preset interval, so that the electrode width (B) of the electrodes lies in the range of 10-1000 microns.

USE - E.g. flat plate type solid acid compound type fuel cell (SOFC) and cylindrical SOFC.

ADVANTAGE - Improves electrolytic vulnerability and the battery capability by forming the fuel and air electrodes on the same surface of the solid electrolyte, thereby enabling high electric power generation.

DESCRIPTION OF DRAWINGS - The figure shows the top and sectional views of the SOFC.(Drawing includes non-English language text).

solid electrolyte (1)
fuel electrode (3)
air electrodes (5)
electrode width (B)
fuel cell housing (E)

FS CPI; EPI
MC CPI: L03-E04A1; L03-E04B
EPI: X16-C01A; X16-E06A

=> d l83 12-23 bib abs hitind
YOU HAVE REQUESTED DATA FROM FILE 'JAPIO, PASCAL, INSPEC, WPIX, HCAPLUS' - CONTINUE? (Y)/N:y

L83 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2009:1519667 HCAPLUS Full-text
DN 152:101490
TI Single-chamber planar **solid oxide fuel** cells
IN Moon, Ju Ho; Lee, Dae Hui
PA Yonsei University, Industry-Academy Cooperation Foundation, S. Korea
SO Repub. Korean Kongkae Taeho Kongbo, 13pp.
CODEN: KRXXA7
DT Patent
LA Korean
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2009123413	A	20091202	KR 2008-49473	200805 28
PRAI KR 2008-49473		20080528		

AB This fuel cell consists of an electrolyte substrate, a fuel electrode and an air **electrode** on the **same surface** of the **substrate**. The fuel electrode and the air electrode are arranged in a concentric manner spaced at a certain distance. The fuel cell further includes: a gasket having a pore the same as or smaller than the pore size of the electrode at the position corresponding to the air electrode, and a gas induction pipe for inducing in order that mixed gas of fuel and air can reach to the air electrode.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST planar **solid oxide fuel cell**
IT **Fuel cells**
(**solid oxide**; single-chamber planar **solid oxide fuel cells**)
IT 1309-48-4, Magnesium oxide, uses 1314-23-4, Zirconium oxide, uses 1344-28-1, Aluminum oxide, uses 7631-86-9, Silicon oxide, uses 11129-18-3, Cerium oxide 12009-21-1, Barium Zirconate 53096-50-7, Barium Cerate 55030-80-3, Lanthanum Gallate 1005207-87-3, Silicon nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(single-chamber planar **solid oxide fuel cells**)
IT 14808-60-7, Quartz (SiO2), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(synthetic; single-chamber planar **solid oxide fuel cells**)

L83 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2007:182921 HCAPLUS Full-text
DN 146:424931
TI Coplanar electrodes design for a single-chamber SOFC
AU Jacques-Bedard, X.; Napporn, T. W.; Roberge, R.; Meunier, M.
CS Departement de Genie Physique, Ecole Polytechnique de Montreal, Montreal, H3C 3A7, Can.
SO Journal of the Electrochemical Society (2007), 154(3), B305-B309
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English
AB **Solid-oxide fuel cells** (**SOFC**) made of conventional materials with coplanar interdigitated **electrodes** located on the **same side** of the **electrolyte** have been fabricated and tested in a uniform mixture of methane and air in order to evaluate the influence of various operating parameters on cell performances. Anode thickness of several hundred micrometers is required to reach good cell stability. Also, the relative positioning of the electrodes in regard to the gas flow should be optimized as the gas composition is modified after passage over the anode. This aspect is particularly important with stacked cells, due to the modification of the gas composition in the upstream portion of the stack. Enhanced performances of the single-side cell were obtained by decreasing the width of the electrodes and their spacing, which both have the effect of reducing the ohmic loss. Following this approach, performances of 40 mW cm-2 were recorded at 800° using electrodes of 0.5 + 8 mm separated by a gap of 0.2 mm.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST electrode design **solid oxide fuel cell**
IT Fuel cell anodes
(coplanar electrode design for single-chamber **solid-oxide fuel cell**)
IT **Fuel cells**
(**solid oxide**; coplanar electrode design for single-chamber **solid-oxide fuel cell**)
OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L83 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2006:11643 HCAPLUS Full-text
DN 144:72335

TI Solid oxide fuel cell and its base material
IN Yoshikata, Kuniaki; Sakamoto, Hirotoshi
PA Dainippon Printing Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006004672	A	20060105	JP 2004-177283	200406 15

PRAI JP 2004-177283 20040615

AB The base material has (1) an electrolyte, anodes set on one side of the electrolyte, and cathodes set on the same side to have fixed intervals between the anodes and the cathodes or (2) a substrate, electrolytes on the substrate, anodes and cathodes on the electrolytes, wherein the electrodes have approx. equilaterally polygonal or round shape. The fuel cell has the base material and interconnectors for connecting electrodes on the base material. Electron conduction loss in current collection is decreased in the cell to improve power generation efficiency.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST solid oxide fuel cell polygonal round electrode interconnector
IT Interconnections, electric
(cell with; solid oxide fuel cell having polygonal or round electrodes on the same side of electrolyte)
IT Fuel cell electrodes
(solid oxide fuel cell having polygonal or round electrodes on the same side of electrolyte)
IT Fuel cells
(solid oxide; solid oxide fuel cell having polygonal or round electrodes on the same side of electrolyte)
IT 1313-99-1, Nickel oxide (NiO), uses 116875-84-4, Cerium samarium oxide (Ce0.8Sm0.2O1.9)
RL: DEV (Device component use); USES (Uses)
(anode containing; solid oxide fuel cell having polygonal or round electrodes on the same side of electrolyte)

IT 59989-70-7, Cobalt samarium strontium oxide (CoSm0.5Sr0.5O3)
RL: DEV (Device component use); USES (Uses)
(cathode; **solid oxide fuel cell** having polygonal or round **electrodes** on the **same side** of **electrolyte**)
IT 681441-22-5, Cerium gadolinium oxide (Ce0.9Gd0.1O1.9)
RL: DEV (Device component use); USES (Uses)
(electrolyte; **solid oxide fuel cell** having polygonal or round **electrodes** on the **same side** of **electrolyte**)
IT 7440-57-5, Gold, uses
RL: DEV (Device component use); USES (Uses)
(interconnector; **solid oxide fuel cell** having polygonal or round **electrodes** on the **same side** of **electrolyte**)
IT 1344-28-1, Alumina, uses
RL: DEV (Device component use); USES (Uses)
(substrate; **solid oxide fuel cell** having polygonal or round **electrodes** on the **same side** of **electrolyte**)
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L83 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:16053 HCAPLUS Full-text
DN 142:97505
TI **Solid oxide fuel cell**
IN Yoshikata, Kuniaki; Mikami, Koichi; Sakamoto, Hirotoshi
PA Dai Nippon Printing Co., Ltd., Japan
SO PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005001970	A1	20050106	WO 2004-JP9347	200406 25

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP	2005259604	A	20050922	JP 2004-71596	200403 12
CA	2533564	A1	20050106	CA 2004-2533564	200406 25
JP	2005038848	A	20050210	JP 2004-188485	200406 25
DE	112004001144	T5	20060524	DE 2004-112004001144	200406 25
CN	1813366	A	20060802	CN 2004-80017949	200406 25
CN	100438168	C	20081126		
CN	101299466	A	20081105	CN 2008-10092363	200406 25
JP	2005044792	A	20050217	JP 2004-197015	200407 02
JP	2005056839	A	20050303	JP 2004-216151	200407 23
US	20070248864	A1	20071025	US 2007-561789	200703 15

PRAI	JP 2003-182618	A	20030626
	JP 2003-271191	A	20030704
	JP 2003-278485	A	20030723
	JP 2004-71596	A	20040312
	CN 2004-80017949	A3	20040625
	WO 2004-JP9347	W	20040625

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A **solid oxide fuel cell** is disclosed which has improved problems such as vulnerability and high cost conventional planar/tubular **solid oxide fuel cells** involved. The **solid oxide fuel cell** is a membrane-free **solid oxide fuel cell** to which a mixture gas of a fuel gas and an oxidant gas is supplied for generation of electricity, and comprises a substrate, an electrolyte which is arranged on one surface of the substrate, and at least one

electrode body (E) which is composed of a fuel electrode and an air electrode arranged on the same surface of the electrolyte at a certain distance from each other.

IC ICM H01M008-02
ICS H01M008-12; H01M008-24

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72, 76

ST solid oxide fuel cell
electrode interconnector

IT Fuel cell electrodes
Fuel cell separators
Interconnections, electric
(solid oxide fuel cell
electrode interconnector)

IT Fuel cells
(solid oxide; solid oxide
fuel cell electrode interconnector)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L83 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:1074821 HCAPLUS Full-text
DN 143:329209
TI Solid oxide fuel cell with
high output and its manufacture
IN Yoshikata, Kuniaki; Sakamoto, Hirotoshi
PA Dainippon Printing Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005276535	A	20051006	JP 2004-85790	200403 23
PRAI JP 2004-85790		20040323		

AB The fuel cell is manufactured by the following steps: (1) forming a fuel electrode paste containing Ni oxide, Ce-based oxide, and binder, (2) forming an air electrode paste containing perovskite-type oxide and binder, (3) applying the fuel electrode paste on one of the surfaces of an electrolyte and sintering at 1200-1600°, and (4) applying the air electrode paste on the same surface and sintering at 1000-1300°. The obtained fuel cell is also claimed.

IC ICM H01M004-88

ICS H01M008-02; H01M008-12
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST electrode paste sintering solid oxide fuel cell manuf; solid oxide fuel cell high output
IT Fuel cell anodes
Fuel cell cathodes
Sintering
(manufacture of solid oxide fuel cell with high output by sintering of electrode pastes on electrolyte)
IT Fuel cells
(solid oxide; manufacture of solid oxide fuel cell with high output by sintering of electrode pastes on electrolyte)
IT 59989-70-7, Cobalt samarium strontium oxide (CoSm0.5Sr0.5O3)
RL: DEV (Device component use); USES (Uses)
(air electrode; manufacture of solid oxide fuel cell with high output by sintering of electrode pastes on electrolyte)
IT 1313-99-1, Nickel oxide (NiO), uses
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(fuel electrode; manufacture of solid oxide fuel cell with high output by sintering of electrode pastes on electrolyte)
IT 116875-84-4, Cerium samarium oxide (Ce0.8Sm0.2O1.9)
RL: DEV (Device component use); USES (Uses)
(fuel electrode; manufacture of solid oxide fuel cell with high output by sintering of electrode pastes on electrolyte)

L83 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:522856 HCAPLUS Full-text
DN 143:62626
TI Planar solid oxide fuel cell
IN Sakamoto, Hirotoshi; Hiromitsu, Aya; Yoshikata, Kuniaki; Mikami, Takekazu
PA Dainippon Printing Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005158591	A	20050616	JP 2003-397481	

200311
27

JP 4423498 B2 20100303
PRAI JP 2003-397481 20031127
AB The planar fuel cell has a set containing an anode, a cathode, and collectors on the same side of a solid electrolyte; where the collectors are formed by applying and drying a conductive paste, and are in contact with the electrolyte and the anode or the electrolyte and the cathode. The collector contains a metal selected from Ni, Pt, Au, Ag, W, Mo, Nb, and Ta; an Fe-Cr or Ni-Cr alloy; and/or a W Cr oxide.
IC ICM H01M008-02
ICS H01M008-12
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST planar solid oxide fuel cell
structure paste printing collector
IT Fuel cells
(solid oxide; structure of planar solid oxide fuel cells containing cathodes and anodes on same side and paste printed collectors)
IT 7440-06-4, Platinum, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(paste printed collectors in manufacture of planar solid oxide fuel cells containing cathodes and anodes on same side)
IT 67-63-0, 2-Propanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(paste printed collectors in manufacture of planar solid oxide fuel cells containing cathodes and anodes on same side)
IT 1313-99-1, Nickel oxide, uses 55575-06-9, Cerium samarium oxide 491845-26-2, Cobalt samarium strontium oxide
RL: DEV (Device component use); USES (Uses)
(structure of planar solid oxide fuel cells containing cathodes and anodes on same side and paste printed collectors)

L83 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:492978 HCAPLUS Full-text
DN 143:10642
TI Membrane-free solid oxide fuel cell
IN Yoshikata, Kuniaki; Mikami, Koichi
PA Dainippon Printing Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005149815	A	20050609	JP 2003-383069	200311 12

PRAI JP 2003-383069 20031112

AB The claimed fuel cell is equipped with ≥1 pair of an anode and a cathode formed on the same flat surface of a solid electrolyte, where the solid electrolyte surface is roughened at areas contacting with the anode and the cathode. The fuel cell provides high power output by the increased contact areas.

IC ICM H01M008-02
ICS H01M008-12
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST solid oxide fuel cell
electrolyte surface roughening
IT Fuel cells
(solid oxide; surface roughening of solid electrolyte in membrane-free solid oxide fuel cell)
IT Fuel cell electrolytes
(surface roughening of solid electrolyte in membrane-free solid oxide fuel cell)
IT 55575-06-9, Cerium samarium oxide 192575-28-3, Cerium gallium oxide
RL: DEV (Device component use); USES (Uses)
(electrolytes; surface roughening of solid electrolyte in membrane-free solid oxide fuel cell)

L83 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:1116585 HCAPLUS Full-text
DN 143:443466
TI Battery composed of single-chamber solid oxide fuel cells (SOFCs)
IN Lu, Zhe; Su, Wenhui; Liu, Jiang; Huang, Xiqiang; Liu, Zhiguo; Miao, Jipeng; Li, Changyu
PA Harbin Institute of Technology, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV
DT Patent

LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1564361	A	20050112	CN 2004-10013620	200403 16
	CN 1253959	C	20060426		
PRAI	CN 2004-10013620		20040316		

AB The existing double-chamber battery has a high requirement for material and manufacturing technique, having complex system structure which is difficult to manufacture and repair. A battery composed of single chamber SOFCs is described, comprising anodes and cathodes alternately arranged on both sides of each electrolyte sheet, where the polarities of the electrode corresponding to the same position on both sides of the sheet are opposite, forming a single cell. Electrolyte isolation region is designed between electrolytes of the adjacent two cells, the cathode of one cell and the anode of the other are connected in series by a conductor, and all of the electrolyte sheets in the vessel are connected via wires to connect all of the cells in series to obtain the battery. This battery has advantages of reduced requirement for material and manufacturing technique, decreased volume, weight and material consumption of the system, lowered cost, and easy popularization and application.

IC ICM H01M008-24
ICS H01M008-10

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST battery single chamber solid oxide fuel cell

IT Fuel cells
(solid oxide; battery composed of single chamber solid oxide fuel cells)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L83 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2004:353014 HCAPLUS Full-text
DN 140:360321
TI Fuel cell with embedded current collector
IN Mardilovich, Peter; Thirukkovalur, Niranjan; Champion, David; Herman, Gregory; O'Neil, James
PA Hewlett-Packard Development Company, L.P., USA
SO U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DT Patent

LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040081878	A1	20040429	US 2002-282772	200210 29
	US 7153601	B2	20061226		
	TW 224883	B	20041201	TW 2003-92123147	200308 22
	CA 2446121	A1	20040429	CA 2003-2446121	200310 22
	JP 2004152761	A	20040527	JP 2003-364317	200310 24
	JP 3768500	B2	20060419		
	EP 1434297	A2	20040630	EP 2003-256766	200310 27
	EP 1434297	A3	20060927		
	EP 1434297	B1	20090909		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	KR 2004038786	A	20040508	KR 2003-75857	200310 29
PRAI	US 2002-282772	A	20021029		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A fuel cell includes one or more fuel cell assemblies. Each of the fuel cell assemblies has an electrolyte having a length, an anode having a length and disposed on one side of the electrolyte, and a cathode having a length and disposed on the same or the other side of the electrolyte. The fuel cell further includes a plurality of current collectors. Each of the current collectors is substantially embedded within, and continuously extends substantially the resp. length of at least one of the electrolyte, anode and cathode.

IC ICM H01M008-12
ICS H01M008-24
INCL 429034000; X42-9 4.4; X42-9 3.2; X42-9 3.3
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
IT Fuel cells
(solid oxide; fuel cell

with embedded current collector)
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L83 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2004:588641 HCAPLUS Full-text
DN 141:126364
TI Fuel cell
IN Yoshikata, Kuniaki; Mikami, Takekazu
PA Dainippon Printing Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004207233	A	20040722	JP 2003-411076	200312 09
PRAI JP 2002-356782	A	20021209		

AB The fuel cell has ≥1 unit cell containing an electrolyte, a **cathode**, and an **anode**, and a **substrate** supporting the unit cell; where the electrolyte is located on 1 side of the **substrate**, and the **cathode** and **anode** are on that **same** side of the **substrate** to hold the **electrolyte**.
IC ICM H01M008-02
ICS H01M008-12; H01M008-24
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT **Fuel cells**
(structure of **solid oxide fuel cells** containing supporting substrates for electrolyte and electrodes)

L83 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2002:136387 HCAPLUS Full-text
DN 136:297343
TI A **solid oxide fuel cell** with a novel geometry that eliminates the need for preparing a thin electrolyte film
AU Hibino, Takashi; Hashimoto, Atsuko; Suzuki, Masanori; Yano, Masaya; Yoshida, Shin-Ichiro; Sano, Mitsuru
CS National Institute of Advanced Industrial Science and Technology, Nagoya, 462-8510, Japan

SO Journal of the Electrochemical Society (2002), 149(2), A195-A200
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English
AB We propose a **solid oxide fuel cell** design based on a configuration of two **electrodes** on the **same surface** of the **electrolyte** in a flowing mixture of different hydrocarbons and air between 500 and 600°. The ohmic resistance can be reduced without using a thin electrolyte film due to a significantly enhanced performance by the approach of the two electrodes to each other on the smooth electrolyte surface. The fuel cell performance, especially at reduced temps., is further improved by using a more reactive hydrocarbon fuel and a more catalytically active anode. The resulting power d. reaches 122 mW/cm2 using 2 mm thicker electrolyte at 500°.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **solid oxide fuel cell**
geometry
IT Fuel cells
(solid electrolyte; design of **solid oxide fuel cell** with novel geometry without need for preparing thin electrolyte film)
IT 74-82-8, Methane, uses 74-84-0, Ethane, uses 74-98-6, Propane, uses 106-97-8, Butane, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fuel; performance of **solid oxide fuel cell** with novel geometry without need for preparing thin electrolyte film using)
OSC.G 26 THERE ARE 26 CAPLUS RECORDS THAT CITE THIS RECORD (26 CITINGS)
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L83 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2001:596455 HCAPLUS Full-text
DN 135:291309
TI Resistance measurement in **solid oxide fuel cells**
AU Jiang, S. P.
CS School of Mechanical and Production Engineering, Nanyang Technological University, Singapore, 639798, Singapore
SO Journal of the Electrochemical Society (2001), 148(8), A887-A897
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English

AB A novel cell configuration has been proposed to measure resistance distribution in **solid oxide fuel cells**. In this configuration, special voltage probes which were not spot-welded to the current collector were used in addition to the conventional voltage probes which were spot-welded to the current collector. The electrochem. responses measured by the conventional and the special voltage probes across the cell behaved very differently compared to that measured between voltage probes on the **same electrode sides**. The results show that the resistance associated with the electrode/current collector contact on the anode and the cathode sides could be separated quant. from the resistance associated with electrode/electrolyte interface contact and electrolyte materials. The reliability of the contact resistance measured by the special voltage probes is discussed.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **solid oxide fuel cell** elec resistance
IT Electric resistance
Solid state fuel cells
(measurement of resistance distribution in **solid oxide fuel cells**)
OSC.G 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l84 1-3 bib abs ind
YOU HAVE REQUESTED DATA FROM FILE 'PASCAL, INSPEC, HCAPLUS' - CONTINUE? (Y)/N:y

L84 ANSWER 1 OF 7 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 1
AN 2009-0351005 PASCAL Full-text
CP Copyright .COPYRGT. 2009 INIST-CNRS. All rights reserved.
TIEN Electrophoretic deposition of dense BaCe.sub.0.sub...sub.9Y.sub.0.sub...sub.10.sub.3.sub.-.sub.x electrolyte thick-films on Ni-based anodes for intermediate temperature **solid oxide fuel cells**
AU ZUNIC Milan; CHEVALLIER Laure; DEGANELLO Francesca; D'EPIFANIO Alessandra; LICOCCIA Silvia; DI BARTOLOMEO Elisabetta; TRAVERSA Enrico
CS Dipartimento di Scienze e Tecnologie Chimiche, Universita di Roma "Tor Vergata", Via della Ricerca Scientifica, 00133 Rome, Italy;

Institute for Multidisciplinary Research, Kneza Viseslava 1a, 11000 Belgrade, SRB; CNR-ISMN, Via Ugo La Malfa, 153, 90146 Palermo, Italy
SO Journal of power sources, (2009), 190(2), 417-422, 34 refs.
ISSN: 0378-7753 CODEN: JPSODZ
DT Journal
BL Analytic
CY Switzerland
LA English
AV INIST-17113, 354000188450740320

AB Proton conducting BaCe.sub.0.sub...sub.9Y.sub.0.sub...sub.1O.sub.3. sub.-.sub.x (BCY10) thick films are deposited on cermet anodes made of nickel-yttrium doped barium cerate using electrophoretic deposition (EPD) technique. BCY10 powders are prepared by the citrate-nitrate auto-combustion method and the cermet anodes are prepared by the evaporation and decomposition solution and suspension method. The EPD parameters are optimized and the deposition time is varied between 1 and 5 min to obtain films with different thicknesses. The anode substrates and electrolyte films are co-sintered at 1550 C for 2 h to obtain a dense electrolyte film keeping a suitable porosity in the anode, with a single heating treatment. The samples are characterized by field emission scanning electron microscopy (FE-SEM) and energy dispersion spectroscopy (EDS). A prototype fuel cell is prepared depositing a composite La.sub.0.sub...sub.8Sr.sub.0.sub...sub.2Co.sub.0.sub...sub.8Fe.sub. 0.sub...sub.2O.sub.3 (LSCF)-
BaCe.sub.0.sub...sub.9Yb.sub.0.sub...sub.1O.sub.3.sub.-.sub.δ (10YbBC) cathode on the co-sintered half cell. Fuel cell tests that are performed at 650 °C on the prototype single cells show a maximum power density of 174 mW cm.sup.-.sup.2.

CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy
CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie
CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia
CT Electrophoresis coating; Nickel; Anode; Solid oxide fuel cell; Cermet; Barium Cerium Yttrium Oxides; Electrode material; Porosity; Scanning electron microscopy; Iron; Prototype
CTFR Depot electrophorese; Nickel; Anode; Pile combustible oxyde solide; Cermet; Baryum Cerium Yttrium Oxyde; Materiau electrode; Porosite; Microscopie electronique balayage; Fer; Prototype

CTES Deposito electroforesis; Niquel; Anodo; Pila combustible oxido solido; Cermetal; Bario Cerio Ytrio Oxido; Material electrodo; Porosidad; Microscopia electronica barrido; Hierro; Prototipo

L84 ANSWER 2 OF 7 PASCAL COPYRIGHT 2010 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 2
AN 1997-0071232 PASCAL Full-text
CP Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
TIEN Colloidal processing of BaCeO.sub.3-based electrolyte films
AU AGARWAL V.; LIU M.
CS School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332-0245, United States
SO Journal of the Electrochemical Society, (1996), 143(10), 3239-3244, 25 refs.
ISSN: 0013-4651 CODEN: JESOAN
DT Journal
BL Analytic
CY United States
LA English
AV INIST-4925, 354000066738270400
CP Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
AB Preparation of high-quality electrolyte films on porous substrates is critical to the fabrication of high-performance solid-state ionic devices such as **solid oxide fuel cells** and chemical sensors. In this study, a colloidal process has been investigated for the preparation of BaCeO.sub.3-based electrolyte films on both dense and porous substrates for electrochemical applications. The important processing variables affecting the microstructures of green films are identified and optimized to obtain uniform, crack-free green films of BaCe.sub.0.sub...sub.8Gd.sub.0.sub...sub.2O.sub.3 with high packing density of the electrolyte particles. Further, dense ceramic films of BaCe.sub.0.sub...sub.8Gd.sub.0.sub...sub.2O.sub.3- based **electrolyte** have been successfully fabricated on **different substrates** by careful process control. In addition, observations indicate that small amounts of additives can dramatically influence the densification behavior of barium cerate-based electrolyte films.
CP Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
CC 001D08B04C2; Applied sciences; Chemistry; Chemicals, Building materials, Ceramics, Glasses, Materials science
CCFR 001D08B04C2; Sciences appliquees; Chimie; Industrie parachimique, Materiaux de construction, Ceramique, Verres, Science des materiaux
CCES 001D08B04C2; Ciencias aplicadas; Quimica; Industria paraquimica, Materiales de construccion, Ceramica, Vidrio, Ciencia de los materiales
CT Oxide ceramics; Electrotechnical ceramics; Solid electrolyte; Film; Barium Oxides; Ternary compound; Manufacturing; Sol gel process; Experimental study

CTFR Ceramique oxyde; Ceramique electrotechnique; Electrolyte solide; Film; Baryum Oxyde; Compose ternaire; Fabrication; Procede sol gel; Etude experimentale; BaCeO3; Ba Ce O
CTES Ceramica oxido; Ceramica electrotecnica; Electrolito solido; Pelicula; Bario Oxido; Compuesto ternario; Fabricacion; Procedimiento sol gel; Estudio experimental

L84 ANSWER 3 OF 7 INSPEC (C) 2010 IET on STN
AN 2008:9948377 INSPEC Full-text
TI Spray pyrolysis deposition of electrolyte and anode for metal-supported **solid oxide fuel cell**
AU Yongsong Xie; Neagu, R.; Ching-Shiung Hsu; Xinge Zhang; Deces-Petit, C. (Inst. for Fuel Cell Innovation, Nat. Res. Council Canada, Vancouver, BC, Canada)
SO Journal of the Electrochemical Society (April 2008), vol.155, no.4, p. B407-10, 15 refs.
CODEN: JESOAN, ISSN: 0013-4651
Published by: Electrochemical Society Inc., USA
DT Journal
TC Practical; Experimental
CY United States
LA English
AN 2008:9948377 INSPEC Full-text
AB Metal-supported **solid oxide fuel cells** (**SOFCs**) offer many advantages, including increased robustness, improved thermal shock resistance, and decreased cost. However, fabricating metal-supported **SOFCs** using conventional techniques is both very difficult and very costly. In this study, two processes of spray pyrolysis deposition, pneumatic spray deposition and electrostatic spray deposition, were used to deposit samaria-doped ceria (SDC) **electrolytes** on **different substrates** and NiO-SDC anodes on porous stainless steel substrates. A cathode layer was subsequently applied on the electrolyte by stencil printing for electrochemical testing. The test results indicated that the electrolyte had reasonable cell performance, but the topography of the anode needed optimization. It was also discovered that the porous ferritic stainless steel 430 substrate used in this study did not have sufficient oxidation resistance as the substrate of a metal-supported **SOFC**.
AN 2008:9948377 INSPEC Full-text
CC A8630G Fuel cells; A8245 Electrochemistry and electrophoresis; B8410G Fuel cells
CT cerium compounds; electrochemical electrodes; electrolytes; nickel compounds; oxidation; pyrolysis; samarium compounds; **solid oxide fuel cells**; spray coating techniques; spray coatings
ST spray pyrolysis; pneumatic spray deposition; electrostatic spray

deposition; metal supported **solid oxide fuel cells**; electrolytes; anodes; porous stainless steel substrates; cathode layer; electrochemical testing; oxidation resistance; NiO-CeO2:SmO2

CHI NiO-CeO2:SmO2 int, CeO2:SmO2 int, CeO2 int, SmO2 int, NiO int, O2 int, Ce int, Ni int, Sm int, O int, CeO2:SmO2 ss, O2 ss, Ce ss, Sm ss, O ss, CeO2 bin, SmO2 bin, NiO bin, O2 bin, Ce bin, Ni bin, Sm bin, O bin, SmO2 dop, O2 dop, Sm dop, O dop

ET Ce*O*Sm; Ce sy 3; sy 3; O sy 3; Sm sy 3; CeO2:SmO2; SmO2 doping; doped materials; Ce cp; cp; O cp; O-CeO2:SmO2; Ce*O; CeO; O-CeO; O*Sm; SmO; Sm cp; Ni*O; NiO; Ni cp; O; Ce; Ni; Sm; Cs*F*O*S; SOFCs; S cp; F cp; Cs cp; C*D*Ni*O*S; SDC; D cp; C cp; NiO-SDC

=> d l84 4-7 bib abs hitind
YOU HAVE REQUESTED DATA FROM FILE 'PASCAL, INSPEC, HCAPLUS' - CONTINUE? (Y)/N:y

L84 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2008:366675 HCAPLUS Full-text
DN 148:565078
TI Spray pyrolysis deposition of electrolyte and anode for metal-supported **solid oxide fuel cell**
AU Xie, Yongsong; Neagu, Roberto; Hsu, Ching-Shiung; Zhang, Xinge; Deces-Petit, Cyrille
CS Institute for Fuel Cell Innovation, National Research Council Canada, Vancouver, BC, V6T 1W5, Can.
SO Journal of the Electrochemical Society (2008), 155(4), B407-B410
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English
AB Metal-supported **solid oxide fuel cells** (SOFCs) offer many advantages, including increased robustness, improved thermal shock resistance, and decreased cost. However, fabricating metal-supported SOFCs using conventional techniques is both very difficult and very costly. In this study, two processes of spray pyrolysis deposition, pneumatic spray deposition and electrostatic spray deposition, were used to deposit samaria-doped ceria (SDC) **electrolytes** on **different substrates** and NiO-SDC anodes on porous stainless steel substrates. A cathode layer was subsequently applied on the electrolyte by stencil printing for electrochem. testing. The test results indicated that the electrolyte had reasonable cell performance, but

the topog. of the anode needed optimization. It was also discovered that the porous ferritic stainless steel 430 substrate used in this study did not have sufficient oxidation resistance as the substrate of a metal-supported SOFC.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST spray pyrolysis deposition electrolyte anode metal supported SOFC
IT Fuel cells
(solid oxide; spray pyrolysis deposition of electrolyte and anode for metal-supported solid oxide fuel cell)
IT Fuel cell anodes
(spray pyrolysis deposition of electrolyte and anode for metal-supported solid oxide fuel cell)
IT Calcination
(spray; spray pyrolysis deposition of electrolyte and anode for metal-supported solid oxide fuel cell)
IT 11109-52-7
RL: TEM (Technical or engineered material use); USES (Uses)
(as substrate; spray pyrolysis deposition of electrolyte and anode for metal-supported solid oxide fuel cell)
IT 1313-99-1, Nickel oxide (NiO), uses 116875-84-4, Cerium samarium oxide (Ce0.8Sm0.2O1.9)
RL: TEM (Technical or engineered material use); USES (Uses)
(spray pyrolysis deposition of electrolyte and anode for metal-supported solid oxide fuel cell)
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L84 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1997:203999 HCAPLUS Full-text
DN 126:188504
OREF 126:36351a,36354a
TI Solid oxide fuel cell
IN Matsushima, Toshio; Ikeda, Daisuke; Kanagawa, Himeko
PA Nippon Telegraph and Telephone Corporation, Japan
SO Eur. Pat. Appl., 24 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 756347	A2	19970129	EP 1996-112130	199607 26
	EP 756347	A3	19970312		
	EP 756347	B1	19990324		
	R: DE, FR				
	JP 09102323	A	19970415	JP 1996-179589	199607 09
	JP 3137177	B2	20010219		
	US 5786105	A	19980728	US 1996-686530	199607 26
PRAI	JP 1995-212364	A	19950728		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The fuel cell comprises an electrode, a solid electrolyte, and an interconnector, wherein a single cell includes the electrolyte formed on a 1st main surface of a cell substrate formed of a 1st electrode material, a 2nd electrode is formed on top of the electrolyte, and the interconnector is formed on a 2nd main surface differing from the surface formed with the electrolyte. The cell substrate is porous, flat-formed, and has a plurality of flow passages of the gas corresponding to the 1st electrode material, the flow passage of the gas is formed in multiple stages in the substrate, forming a plurality of gas flow passages as supply passages and a plurality of gas flow passages as return passages. The supply passage and return passage communicate with each other at a gas turn back portion in the substrate, and openings of the supply passage and the return passage are located on a side surface of the substrate.

IC ICM H01M008-02
ICS H01M008-10; H01M008-12

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST solid oxide fuel cell

IT Fuel cells
(solid oxide)

OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L84 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1997:78922 HCAPLUS Full-text

DN 126:227564

OREF 126:43963a,43966a

TI Preparation of BaCeO3-based electrolyte films

AU Agarwal, Vishal; Liu, Meilin

CS School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, 30332-0245, USA
SO Proceedings - Electrochemical Society (1997), 95-24(Ceramic Membranes), 177-191
CODEN: PESODO; ISSN: 0161-6374
PB Electrochemical Society
DT Journal
LA English
AB Preparation of high-quality electrolyte films on porous substrates is critical to fabrication of high-performance solid-state ionic devices such as **solid oxide fuel cells** and chemical sensors. Colloidal process has been investigated for the preparation of BaCeO3-based electrolyte films on both dense and porous substrates for electrochem. applications. The important processing variables affecting the microstructures of green films are identified and optimized to obtain uniform, crack-free green films of BaCe0.8Gd0.2O3 with high packing d. of the electrolyte particles. Further, dense ceramic films of BaCe0.8Gd0.2O3-based **electrolyte** have been successfully fabricated on **different substrates** by careful process control. In addition, observations indicate that small amount of additives can dramatically influence the densification behavior of barium cerate-based electrolyte films.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L84 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1996:672133 HCAPLUS Full-text
DN 125:313397
OREF 125:58387a,58390a
TI Processing and transport properties of double layer electrolytes
AU Pais, T. F.; Marques, F. M. B.; Wirtz, G. P.
CS Ceramics and Glass Engineering Department, University Aveiro, Aveiro, 3810, Port.
SO British Ceramic Proceedings (1996), 56(Ceramic Oxygen Ion Conductors and Their Technological Applications), 53-70
CODEN: BCPREL; ISSN: 0268-4373
PB Institute of Materials
DT Journal
LA English
AB ZrCl4 and YCl3 were prepared by high temperature reaction of YSZ (yttria-stabilized zirconia) and CCl4, in the presence of carbon. The metal chlorides produced in this manner were used to grow YSZ films on **different** dense **electrolyte substrates**, by EVD (electrochem. vapor deposition), at ambient pressure (1 atm) and 1100°C. The oxygen permeability of two layer electrolyte cells (substrate + film) is

related to the film and substrate elec. transport properties and to film thickness, at constant substrate thickness. Ests. for the oxygen permeability of double layer electrolyte cells are compared with effective growth rates of YSZ films deposited on GCO (Gd2O3 doped CeO2), YSZ and TiYSZ (titania doped YSZ) substrates. The relatively small growth rates observed under all these conditions indicate that the film growth rate is not exclusively determined by the substrate elec. properties, although growth rates qual. follow the expected dependence on the electrolyte properties.

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 52, 65

IT Fuel-cell electrolytes
(solid oxide; processing and transport properties of double layer electrolytes)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

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